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ABSTRACT

Sixty-one learning disabled (LD) adolescents in four junior high schools were randomly assigned to experimental or control groups as part of an effort to teach LD students to set realistic goals so they might experience success and satisfaction in school. Ss in the experimental group made achievement contracts and predicted their performance in either math or spelling. Pre- and posttest scores on the Intellectual Achievement Responsibility Questionnaire, the Task Attribution Questionnaire, the Test of Goal Setting Strategies, and the Evaluation of Treatment Inventory revealed that the intervention was successful in teaching strategies for setting realistic goals, and that experimental Ss used effort attributions to explain their performance significantly more often than they used ability, luck, or task difficulty attributions. Three case studies illustrate strategies used by LD students in the study. (CL)

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Teaching Learning Disabled Adolescents to Set Realistic Goals

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This study reports the results of a training program designed to teach Learning Disabled junior high school students to set realistic achievement goals, to expend effort to reach the goals, and to accept personal responsibility for achievement outcomes. Subjects were 61 LD adolescents attending four junior high schools. Students were randomly assigned to an experimental or control group. Goal setting strategies and effort attribution training were introduced for a six-week period. Pre- to post-testing indicated that the experimental group learned to set realistic goals and to attribute achievement outcomes to the amount of personal effort expended.

Paper presented at the annual meeting of the American Educational Research Association, New York, 1982.

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TEACHING LD ADOLESCENTS TO SET REALISTIC GOALS

Nona Tollefson, D. B. Tracy, E. P. Johnsen, Meredith Buenning, Art Framer

Learning disabled (LD) adolescents have a history of school failure which may be attributed in part to low achievement motivation (Deshler, 1978; Rosenthal, 1973). Ross (1976) and Torgesen (1977) characterize the LD student as possessing poorly developed planning and organizational skills. Hallahan, Gajar, Cohen, and Traver (1978) describe the LD student as inefficient in problem solving. Harway (1962) and Tollefson, Tracy, Johnsen, Buenning, Farmer, and Barké (1979) depict the LD adolescent as lacking goal setting skills and the ability to use past performance as a predictor of future performance. These researchers all suggest that LD adolescents are severely hindered in academic tasks by low motivation and lack of planning skills.

The purpose of the present research was to teach LD students to structure part of their school environment through realistic goal setting so that they might experience feelings of success and satisfaction in school. Through a combination of achievement motivation and level of aspiration activities, (e.g., using past feedback, expending effort) learning disabled adolescents were taught to set realistic academic goals, to develop plans to reach these goals and to accept responsibility for success and failure in reaching the goals.

This research was funded in part by a grant from the Institute for Research on Learning Disabilities at the University of Kansas.

Two research questions were addressed:

1) Can LD students be taught a strategy for setting realistic achievement goals?

2) Will effort attribution training combined with instruction in realistic goal setting produce more frequent effort attribution than ability, luck, or task difficulty attributions?

Goal setting, in achievement related activities, involves specifying a desired level of performance in advance of a task and making a conscious effort to achieve that level of performance. Locke (1968) defines a goal as "what the individual is consciously trying to do." Goals can differ qualitatively (e.g. 'do your best' versus 'try to improve') and quantitatively (e.g. 'try for a score of 50' versus 'try for a score of 70') (Locke, Bryan, & Kendall, 1968).

The positive effects of goal setting, both in a qualitative and quantitative manner, have been explored extensively by Locke and his associates (Locke 1966a, 1967a, 1967b, 1968; Locke & Bryan, 1966a, 1966b; Bryan & Locke, 1967b; Locke, Cartledge & Knerr, 1970; Locke, Cartledge, & Koeppel, 1968). These researchers have found (a) that specific goals lead to better performance than more general goals or no goals at all; (b) that the more difficult the goal the higher the level of performance; and (c) that individuals who set goals or individuals who have goals set for them, show an increase in motivation, task interest, and personal satisfaction.

Research also indicates that individuals with an internal locus of control have greater expectations of success (Crandall, Katkovsky & Preston, 1962; Feather, 1967) and persist longer at a task than individuals with an external locus of control (Altshuler & Kassinove, 1975;

Crandall, Katkovsky & Crandall, 1965; Crandall, Katkovsky & Preston, 1962; Dweck 1975; Feather, 1967). Dweck and Repucci (1973) found persistent subjects more likely to take responsibility for performance than less persistent subjects. Research has also shown that individuals with an internal locus of control perform better academically than individuals with a more external locus of control. (deCharms, 1976; Hisama, 1976; McGhee & Crandall, 1968; Shaw & Uhl, 1971).

Attributions have been shown to alter the affect associated with an event. Internal attributions for success and failure outcomes in achievement related areas produce more emotional reactions than external attributions (Feather, 1967, Nisbett & Schachter, 1966; Ross, Rodin & Zimbardo, 1969; Schachter & Singer, 1962; Storms & Nisbett, 1970). Specifically, attributions to effort and ability increase affect associated with achievement outcomes (Eswara, 1972; Lanzetta & Hanna, 1969; Leventhal & Michaels, 1971; Rest, Nierenberg, Weinern & Heckhausen 1973; Weiner & Kukla, 1970; Zander, Fuller & Armstrong, 1972).

In summary, this study assessed the effectiveness of a strategy designed to teach LD students to set specific achievement goals, to develop plans to reach the goals, and to attribute success and/or failure to effort. The teaching strategy was developed from the research findings of motivation and attribution theorists. The study was also concerned with developing theoretical explanations of LD students' behavior in achievement related situations.

METHODOLOGY

Subjects

Subjects were 61 junior high school LD students (13 female and 48 male) assigned to a resource room setting for at least one 50 minute

period. Students attended one of four junior high schools in a city of 150,000 people. The schools were selected by district administrative personnel from the district's nine junior high schools to be representative of the district's racial, cultural, and socio-economic characteristics.

The school district used a four step sequential decision-making process to identify LD students. The process began with teacher referral; the following step was screening by the LD teacher. If the LD teacher considered the student to be learning disabled, the student was referred to the School Psychologist for individual testing. If the results of testing indicated that the student had average ability (WISC-R), but scored at least two grades below his/her grade placement on a recent achievement test, the student was eligible for resource room placement. The fourth step of the process was a formal staffing and decision about educational placement.

Students in the present sample had average ability. WISC-R full scale IQs for the sample ranged between one and two standard deviations below the mean. All LD students in the sample had scored at least 2 grade levels below their grade placement on the mathematic and language sub-test of the Iowa Test of Basic Skills.

LD students were randomly assigned within each junior high school to either an experimental or a control group. Thirty-nine students (11 female and 28 male) were assigned to the experimental group and 22 students (2 female and 20 male), to the control group. There were 11 seventh graders, 14 eighth graders, and 15 ninth graders in the experimental group. The control group included 10 seventh graders, 8 eighth graders, and 4 ninth graders.

Instruments

The Intellectual Achievement Responsibility Scale (IAR) (Crandall et al, 1965) and the Task Attribution Questionnaire (TAQ, Tollefson, et al, 1979) were administered prior to treatment and following treatment. Two additional instruments, The Test of Goal Setting Strategies and the Evaluation of Treatment Inventory, were administered as post-tests to the experimental group only.

The Intellectual Achievement Responsibility Questionnaire (Crandall et al, 1965) consists of 34 forced-choice items. The respondent is presented with a positive or negative achievement situation and asked to choose between two attributions. One attribution is an internal attribution wherein the subject assumes responsibility for the achievement outcomes. The other is an external attribution where the outcome is seen as the responsibility of the situation or some other person. The I score gives the number of achievement situations for which the person takes responsibility, i.e., selects the internal attribution.

The Task Attribution Questionnaire (Tollefson et al; 1979) is a 4-item questionnaire which measures attributions, performance, and expectancy of success. Before pre-testing, the LD teacher selected the subject area (spelling or math) for each student. The TAQ asked students to predict initially how many moderately difficult words or math problems they would spell or work correctly. After recording the prediction, the tests were administered orally. Students were given feedback about their performance and asked for a new prediction. After three trials, students were asked to attribute the reason for their performance to ability, luck, task difficulty, or effort.

The Test of Goal Setting Strategies (Tollefson, Tracy, Johnsen, Buenning, Farmer, 1980) consisted of 10 multiple choice items. Students were asked to interpret graphs, set academic goals, and evaluate the adequacy of a study plan for achieving an academic goal.

The Evaluation of Treatment Inventory (Tollefson, et al; 1980) includes three multiple choice items. LD student participants report their feelings about and evaluations of the project.

Procedures

LD Teacher Workshop. A one-day workshop was held for the five LD teacher participants. The workshop introduced teachers to the concepts of realistic goal setting, use of feedback, and accepting personal responsibility. Teachers participated in all activities that would later be used with their students and offered suggestions for modifying the activities.

Pre-testing. After student consent forms were returned, research assistants administered the IAR. In addition, the (TAQ) was administered individually to each student.

A basketball game was designed to introduce realistic goal setting techniques to the students and to acquaint them with the data collection procedures to be used during the intervention. In the basketball game, students selected a pre-set distance (long-moderate-short) from which to throw three balls into a wastebasket. Students predicted how many baskets they would make. Each trial consisted of three tosses. Students charted their predictions, threw the ball three times, and charted their actual scores.

Intervention The week following the basketball game, the baseball game was introduced into each LD treatment classroom. The Baseball Game

was structured like a regular baseball game. The student was the batter, an RA was the pitcher, the pitch was a spelling word, a hit was a correctly spelled word, and an out was a mispelled word.

LD teachers prepared four lists of words for each student. The list contained easy (a single), moderately difficult (a double), difficult (a triple), and very difficult (a homerun) words. Each list was matched to the ability level of the student.

LD teachers helped the RA's divide the students into two teams of equal ability. As each inning began, students requested the type of hit they wanted and charted the prediction. The student could select a single, double, triple, or homerun word. The RA pronounced the word and the student spelled the word orally. The RA told the student if the word was spelled correctly (a hit) or incorrectly (an out) and the students charted their actual outcomes. Each team was given two minutes at bat or three outs, whichever came first.

The Achievement Contract phase of the intervention began after the Baseball Game. Each student was given a booklet of contracts and $100 in play money to invest. Achievement contracts were modeled after a math contract described by Altshuler, Tabor, and McIntyre (1971).

Before the achievement contracts were initiated, the resource room teachers assigned each student to work either in the area of math or spelling. Each week students selected ten words or math problems from a list of twenty moderately difficult ones. The words or math problems were prepared by the resource room teachers and were matched to the achievement level of the student. Students predicted how many items they would answer correctly on a test the following week and charted this prediction. The goal (prediction) was also stated in a written

contract in the student's booklet along with a description of the study plan to be followed to accomplish this goal. After setting their goal, students deposited their investment and recorded the deposit in a bank book. Students were given $100 in play money and allowed to invest up to $100.00 per week. Returns on investments were greatest when students achieved their predictions. Arrangements could be made for loans if students needed them. A 10% interest rate was charged for all loans.

The following week the student was given the spelling words or math problems in the form of a test. After the test had been corrected, the students charted their actual scores and completed the evaluation section of the contract. In the evaluation section, the student compared outcome to goal, evaluated satisfaction with performance, attributed a reason for performance, and changed their action plans if desired. Payoffs in the form of play money were also made, new words or math problems were given and new goals were stated and graphed. The achievement contract phase continued for five weeks for most students.

During the achievement contract phase of the study, students and research staff met individually to discuss strategies, study plans, predictions, attributions for outcomes, and feelings associated with outcomes. These conferences were held while the students were completing the evaluation page of the contract. The conferences were ten to fifteen minutes in length depending upon the size of the class and the time available.

Post-testing. Following the final week of the Achievement Contracts, post-testing began. Treatment and control groups were administered both the group and individual measures used during the pretesting.

RESULTS

The results of the study are presented in the context of the research questions which guided the study.

Research Question 1: Can LD adolescents be taught a strategy for setting realistic academic goals?

Analysis of the data from the treatment activities (the basketball and baseball games and the achievement contracts) indicated four patterns of goal-setting: realistic, over-predicting, under-predicting, and random. Agreement between two independent judges was required for a student to be placed in a category.

Seven (19%) of the experimental students were judged to be realistic goal setters at the on-set of treatment as evidenced by their scores on the initial basketball game. Twenty-six students (70%) in the experimental group were classified by 2 independent judges as realistic goal setters by the end of treatment, a significant increase ($p < .05$) in the percentage of students classified as realistic goal setters. Rotter's (1945) criteria of realistic goal setting were used to classify students as realistic goal setters.

Students were also asked to evaluate the intervention activities. Students ranked their preference for treatment activities, rated their enjoyment of the project, and indicated whether the project helped them to improve their school work. The game activity was the prefered activity. As the activity became more like classroom work, the preference for the activity decreased. Nevertheless all LD students reported that they enjoyed participating in the project. However, about half (54%) of the students did not associate the project activities with their school work.

In summary, LD students as a group did not display realistic goal setting behavior at the on-set of treatment. Treatment produced a significant increase in the number of students exhibiting realistic goal setting strategies. Cognitive assessment of students' goal setting strategies by an end-of-treatment test yielded scores for all experimental students that were significantly higher than chance scores. Students over-all ratings of the project were favorable. Eighty-one percent of the students (n = 29) reported enjoying the project activities most or all of the time. No participant reported disliking participation in the project. While the study was effective in teaching realistic goal setting strategies, students did not necessarily conceptualize the relationship between being successful during the project and using the strategy learned as part of the project to improve their school work.

Research Question 2: Will effort attribution retraining combined with instruction in realistic goal setting produce more frequent effort attributions than ability, luck, or task difficulty attributions?

Attributions were collected from experimental students weekly during the achievement contract phase of the treatment and at the end of the project. Table 1 presents the frequency of effort attributions for success and failure experiences during the achievement contract phase.

INSERT TABLE 1

Chi Square analysis of the attributions given during the achievement contracts indicated significantly more effort attributions for success ($X^2 = 106.7$, df = 1, $p < .01$) and for failure ($X^2 = 115.4$, df =

1, $p < .01$) than ability, task difficulty, or luck attributions. Chi Square analysis of the end-of-project attributions also showed significantly ($X^2 = 36.99$, df = 1, $p < .001$) more effort attributions than ability, task difficulty, or luck attributions were given. Table 2 gives the frequency of effort attributions at the project's completion.

Insert Table 2

The IAR was completed by the experimental and control groups of LD students and scored for effort, ability, task difficulty, and luck attribution. Pre-test scores were used as the covariate. Table 3 gives the pre and post-test mean and the adjusted post-test means for the experimental and control groups. The experimental students showed a higher adjusted post-test mean for effort attribution and a lower adjusted post-test mean for luck than did the control subjects. Therefore, the effect, while non-significant, was in the direction hypothesized to occur as a result of the intervention.

Insert Table 3 here

To summarize, effort attribution training produced a significantly greater number of effort attributions than ability, task difficulty, or luck attributions by thd treatment group of LD students. The treatment group also showed an increase in effort attribuions and a decrease in attributions to luck on the IAR from pre- to post- testing. The effect was not significant at the .05 level, but the pattern of attributions was in the predicted direction.

DISCUSSION

The present research evaluated the effectiveness of an intervention designed to teach LD adolescents to set realistic achievement goals, to expend effort to reach the goals, and to accept personal responsibility for achievement outcomes. The intervention progressed from a physical game, to an academic game, to an achievement contract. The intervention proved successful in teaching LD adolescents a strategy for setting realistic goals.

A realistic goal was defined in terms of the difference between actual performance and predicted performance. Realistic goal setting was defined as a low negative to moderate positive discrepancy score (Rotter, 1945). The end-of-treatment test scores and the significant increase in the proportion of students exhibiting realistic goal setting strategies at the end-of-treatment demonstrated that LD adolescents can be taught to set achievement goals congruent with their past performance.

The intervention program also emphasized effort attribution and assuming personal responsibility for achievement outcomes. Attribution data collected during treatment indicated that the experimental students used effort attributions to explain their performnce significantly more often than they used ability, luck, or task difficulty attributions. Analysis of the pre- and post- IAR mean scores showed experimental students gave effort attributions more frequently than control students, although these increases were not significant. Thus the attribution data also show the treatment program to be effective in attribution retraining, at least in teaching students to state personal responsibility for achievement outcomes.

In addition to the information about the effectiveness of the intervention program, this study also provided data about the goal setting patterns of LD adolescents. Three case studies will illustrate the stategies used by the LD students in this study.

Case Study #1: A realistic goal setter

The intervention activities of a ninth grade male student illustrate realistic goal setting. The first week of the Achievement Contracts, the student predicted 100%, and succeeded. The next week he predicted 100% but actually got 80% correct. He adjusted his prediction to 80% following feedback about his actual performance and was successful in meeting future goals. His attribution for failure was lack of effort. He was satisfied with success and partly satisfied/partly disatisfied with failure.

The same pattern of realistic goal setting was evident in the final intervention activity, the Basketball Game. The student started at the long distance moving downward until meeting success. After meeting success he proceeded to higher predictions and when faced with failure again moved downward.

This student used knowledge of past performance to set achievement goals, attributed success and failure to personal effort, and reported affect appropriate to achievement outcomes. Seventy percent of the experimental students exhibited this pattern of behavior at the end-of-treatment.

Case Study #2 An Underpredictor

The responses of a ninth grade male show the pattern of underprediction displayed by 16 percent of the treatment group. During the Achievement Contracts, the student predicted initially that he would

spell nine out of ten words correctly. He spelled six out of ten words correctly, therefore failing to meet his goal. After this failure experience, he lowered his predictions to the 10% level and continued to predict this level of performance throughout the last weeks of the contract. He experienced failure the first week and success the next two weeks. He took responsibility for failure by attributing it to lack of effort but attributed successes to the ease of the task.

This student's behavior reflects what Covington and Omelich (1979a) and Rotter (1954) label as an unrealistic need to protect the self from failure and what Dweck (1975) has labeled "learned helplessness". The student did not set goals congruent with prior performance. He took personal responsibility for failure, but did not attribute success to personal factors.

Case Study #3 An Overpredictor

The behaviors and responses of an eighth grade male typify the goal setting strategy of an overpredictor. During the Achievement Contracts, this student predicted 100% each week and never experienced success. Each time he was asked how satisfied he was with his performance he said he was completely satisfied. When asked about these feelings after failure he stated that things could always be worse. He attributed failure to forgetfulness or studying the wrong answers to math problems.

This student's behavior illustrates what Covington and Omelich (1979a) describe as setting unrealistically high goals to protect against failure. The student was able to state that he was satisfied with failure because failing to reach an impossibly highly goal was not really failure. In other words, when rationalizations exist to deflect possible negative inferences about one's abilities, one can maintain some sense of work in spite of functional failures.

Some experimental students (13%) could not be labeled as realistic or unrealistic goal setters. They exhibited no systematic patterns of predictions and made few appropriate shifts in goals. Harrison et al (1972) found that EMR students with a history of school failure exhibited random goal setting patterns. This study suggests that a small percent of LD students also exhibit random goal setting patterns.

The patterns of goal setting behaviors exhibited by the LD students in the treatment group show the heterogeneity of this group of LD students. While a significant proportion of the treatment group learned to set realistic achievement goals and to accept responsibility for achievement outcome, a number of the students (30%) showed patterns of behavior that defended against failure in ways which preclude academic success.

The relatively high success rate in this study is a promising outcome for intervention studies. Covington and Omelich (1979b) have suggested that training in realistic goal setting fosters a success orientation rather than a failure avoidance syndrome and simultaneously reduces defensive maneuevering or distortions. However, programs for teaching realistic goal-setting must consider the entry behavior of the students.

LD students have learned to cope with a history of failure. Taking seriously the goal-setting training program implies the willingless to take responsibility for success or failure. As we have seen, a minority of students deny the reality of their success by maintaining very low aspiratons while others deny failures by externalizing the causes. Covington and Omelich (1979b) have suggested that the former students debase success because they interpret the success as not reflecting

positively on their own abilities or competencies. These students fear that they now possess the ability to meet the implied obligations of continuing to reproduce success outcomes. At the same time, the latter students distort their failures by rationalizing. These students are concerned about avoiding failure in an environment they see as providing insufficient rewards. Effort or motivation is especially futile here because trying hard in the context of inevitable failure is proof of low ability.

Several issues remain to be investigated in future studies. For our successful goal-setters, will these skills transfer to less artificial academic settings? This question is critical given that approximately 50% of our sample didn't see the relationship between the training and typical school matters. What additional steps or techniques (e.g., modeling) might be useful in promoting goal-setting strategies among the 30% of the sample who could not cope with the personal responsibility implied in this training program?

While effort attributions have shown change as a function of retraining efforts, problems brought to light in recent studies suggest that a complex interaction between ability and effort inferences occurs in both failure and success situations. Fowler and Petersen (1981) seem to imply that some risk of failure is an important aspect of attribution retraining programs if the effects of the program are to generalize. But failure in achievement settings leads to shame and distress unless the failure can be reinterpreted or deflected by rationalizing. Even suggesting that the causes for failure are personal, unstable, controllable factors like effort is risky because of the overiding need to protect self-esteem. Attributing failure to insufficient effort when

subjects are working diligently results in a negative self-evaluation of one's personal competency, the sine-qua-non condition for continued motivation. Effort attributions are at best not motivating for subjects who suffer basic deficits or disabilities that deter academic success as the school defines it for the student (Schunk, 1981)

Finally, the results of the study suggest that a group of LD students (the under predictors) exhibit the characteristics of the hopeless/helpless student. The hopeless/helpless subject will not accept responsibility for success in a potentially successful environment. There are several alternative explanations for the students unwillingness to take personal credit for their successes. The LD students may continue to compare themselves with the competitive standards of regular students. It may also be that one success due to substantial effort is insufficient to reinforce a personal sense of competency or personal control. Finally, it is possible that LD students fear that others will come to expect future success as the standard , a standard the student believes cannot be met (Covington & Omelich, 1979b). We await the results of future studies to tease out these relationships.

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Table 1

Frequency of Effort Attributions for Success and Failure Experiences during the Achievement Contract Phase of the Project

Attributions	Success		Failure	
	n	%	n	%
Effort	53	79	49	72
Ability	0	0	9	13
Task Difficulty	8	12	9	13
Luck	6	9	1	2

Table 2

Frequency of End-of-Project Attributions
For Experimental Students

Attributions	n	%	Combined
High Effort	19	49	69
Low Effort	7	20	
High Ability	1	3	13
Low Ability	4	10	
Easy Task	2	5	5
Difficult Task	0	0	
Luck	4	10	15
Unlucky	2	5	

Table 3

Adjusted Post-test Means for Effort, Ability, Task Difficulty, and Luck Attributions for the Experimental and Control Groups

Effort						
Group	Pre		Post		Adjusted Post	F
	X	S	X	S	X	
E	16.2	3.8	17.2	3.7	17.1	1.36
C	16.6	3.3	16.3	3.1	16.1	

Ability						
Group	Pre		Post		Adjusted Post	F
	X	S	X	S	X	
E	7.5	1.8	7.5	1.9	7.5	
C	7.2	1.6	6.9	1.7	6.9	1.25

Task Difficulty						
Group	Pre		Post		Adjusted Post	F
	X	S	X	S	X	
E	1.8	1.5	1.8	1.5	1.9	1.10
C	2.2	1.3	2.4	1.5	2.3	

Luck						
Group	Pre		Post		Adjusted Post	F
	X	S	X	S	X	
E	8.3	3.9	7.6	3.8	7.5	1.62
C	7.9	3.4	8.3	3.5	8.5	